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GB 5009.12-2023

National Food Safety Standard

Determination of Lead in Food

食品安全国家标准 食品中铅的测定

National Health Commission of the People's Republic of China
State Administration for Market Regulation of the People's Republic of China

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Translated by ChemLinked

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National Standard of the People's Republic of China

GB 5009.12-2023
In Replacement of GB 5009.12-2017

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食品安全国家标准

食品中铅的测定

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Foreword

This standard replaces GB 5009.12-2017 “National Food Safety Standard Determination of Lead in Food”.

Compared with GB 5009.12-2017, the main changes of this standard are as follows:

——It added the pretreatment method for samples that need to be desalted in the first method of graphite furnace atomic absorption spectrometry;

——It deleted the fourth method, disulfide hydrazone colorimetric method;

——It modified the detection limit and quantification limit of the first method graphite furnace atomic absorption spectrometry.

National Food Safety Standard

National Food Safety Standard Determination of Lead in Food

1. Scope

This standard specifies the determination method of lead in food by graphite furnace atomic absorption spectrometry, inductively coupled plasma mass spectrometry and flame atomic absorption spectrometry.

This standard applies to the determination of lead in food.

Method 1: Graphite Furnace Atomic Absorption Spectrometry

2. Principle

After the sample is digested, it is atomized in a graphite furnace and the absorbance is measured at 283.3 nm. Within a certain concentration range, the absorbance value of lead is proportional to the lead content and can be quantitatively compared with the standard series.

3. Reagents and Materials

Unless otherwise specified, all reagents used in this method are of high purity and the water is Grade 2 water as specified in GB/T 6682.

3.1 Reagents

3.1.1 Nitric acid (HNO_3).

3.1.2 Perchloric acid ($HClO_4$).

3.1.3 Ammonium dihydrogen phosphate ($NH_4H_2PO_4$).

3.1.4 Palladium nitrate [$Pd(NO_3)_2$] .

3.1.5 Ammonium acetate (CH_3COONH_4).

3.1.6 Sodium acetate (CH_3COONa).

3.2 Reagent preparation

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